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# The ClearfLo project – Understanding London's meteorology and composition

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ClearfLo is a large multi-institutional project funded by the UK Natural Environment Research Council (NERC). ClearfLo established integrated measurements of meteorology, gaseous and particulate composition/loading of London's (UK) urban atmosphere in 2011 and 2012 to understand the processes underlying poor air quality. A new and unique long-term measurement infrastructure was established in London at street level, urban background and elevated sites and contrasted against rural locations to determine the urban increment in meteorology and pollution.

This approach enables understanding the seasonal variations in the meteorology and composition together with the controlling processes. In addition two intensive observation periods (IOPs) provide more detail in winter 2012 and during the Olympics in summer 2012 focusing upon the vertical structure and evolution of the urban boundary layer, chemical controls on nitrogen dioxide and ozone production, in particular the role of volatile organic compounds, and processes controlling the evolution, size, distribution and composition of particulate matter.

In this talk we present early analysis of the meteorology and air quality measurements within ClearfLo. In particular we show measurements that indicate the dominant regimes of London's boundary layer.